

FIG. 1

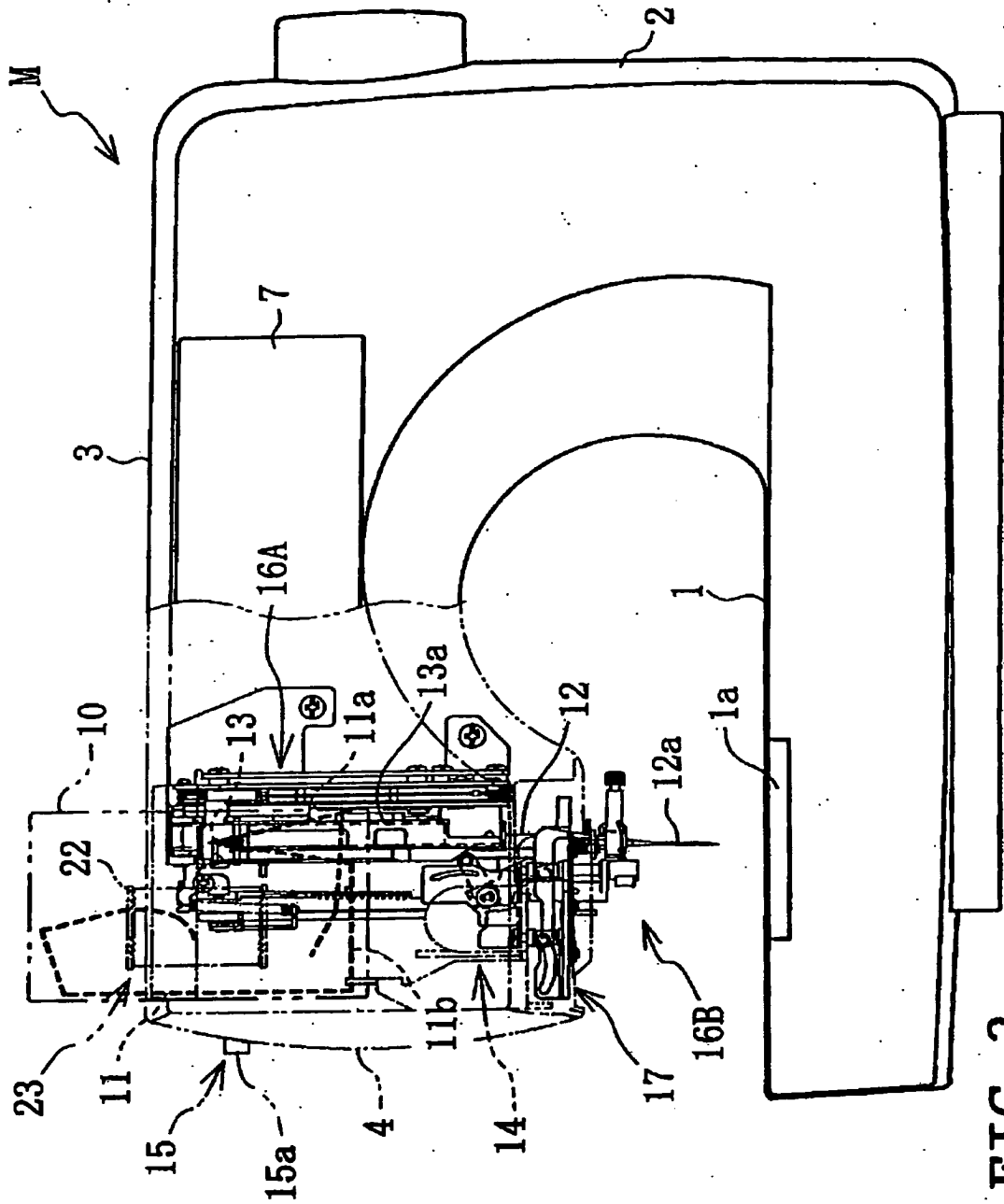


FIG. 2

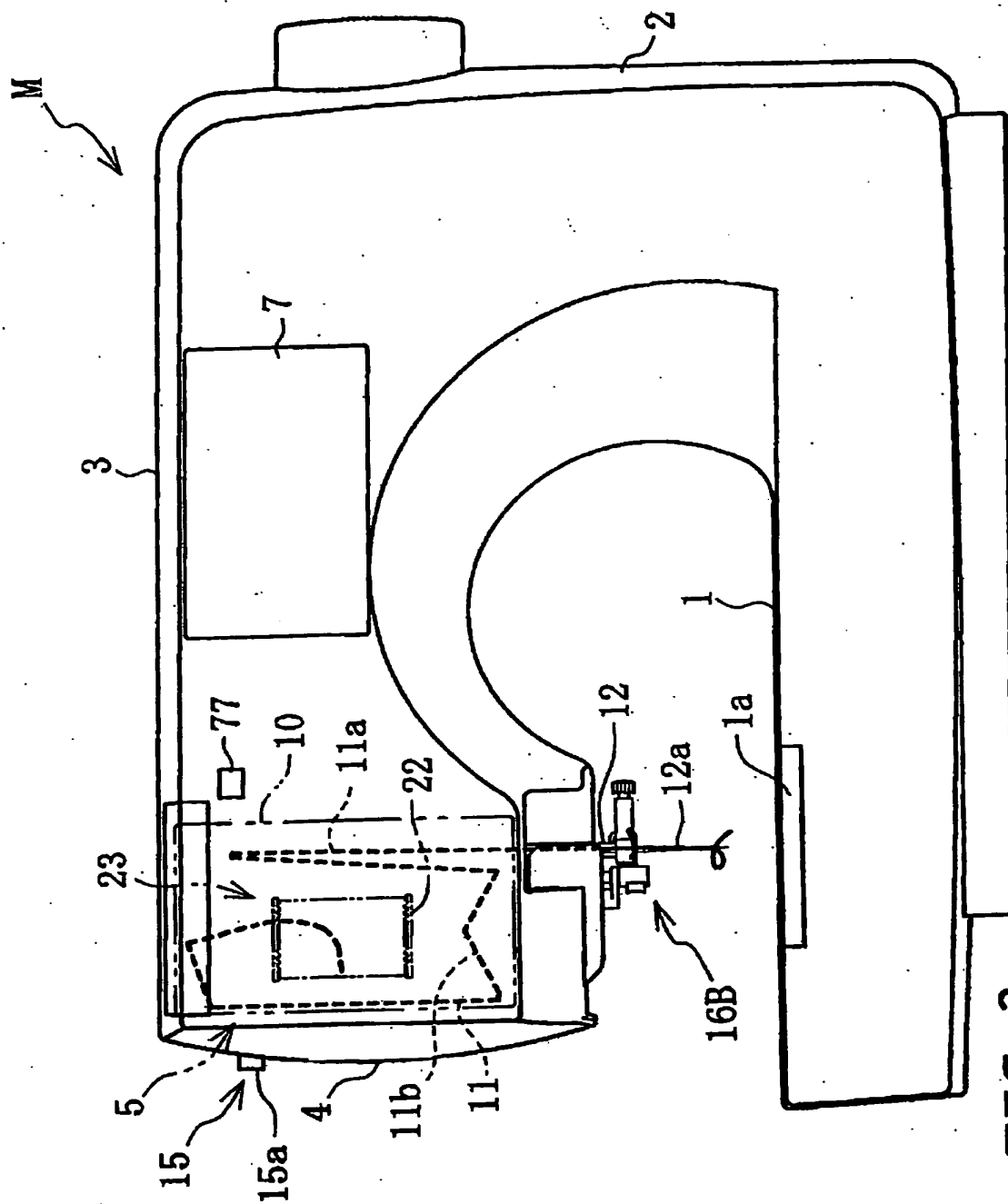


FIG. 3

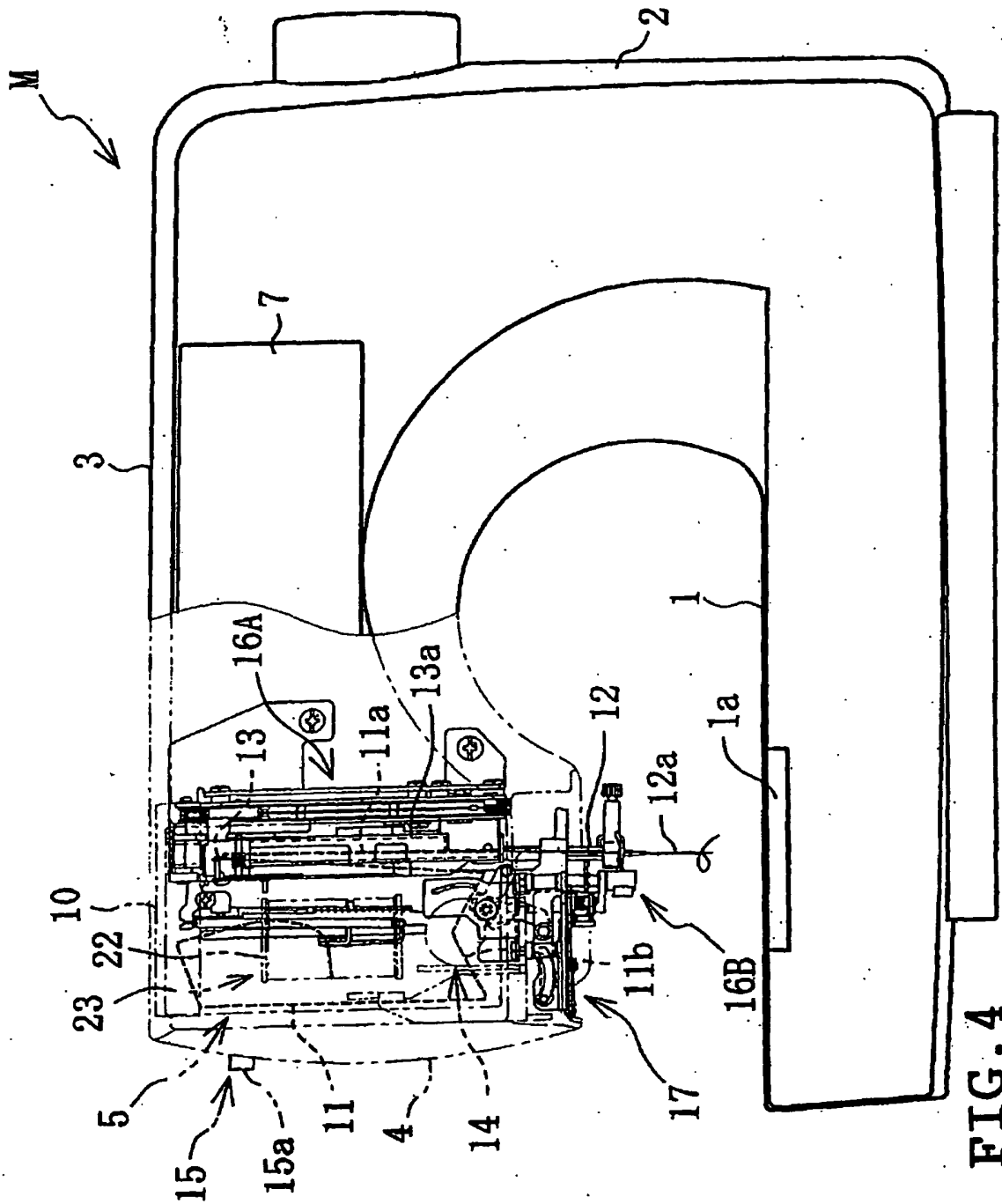


FIG. 4

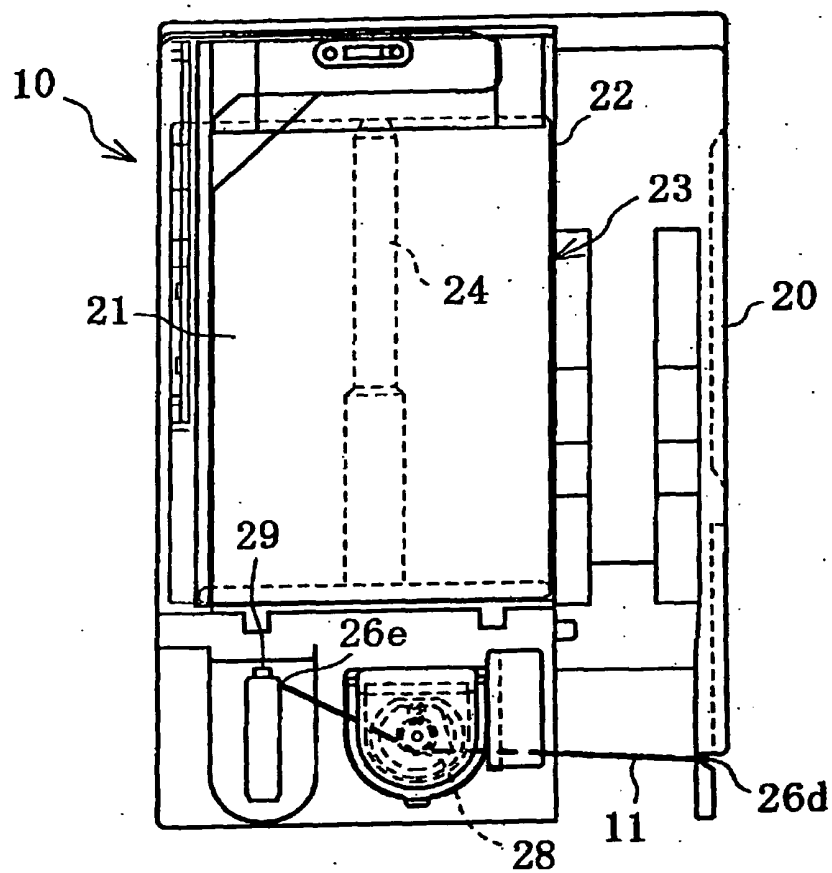
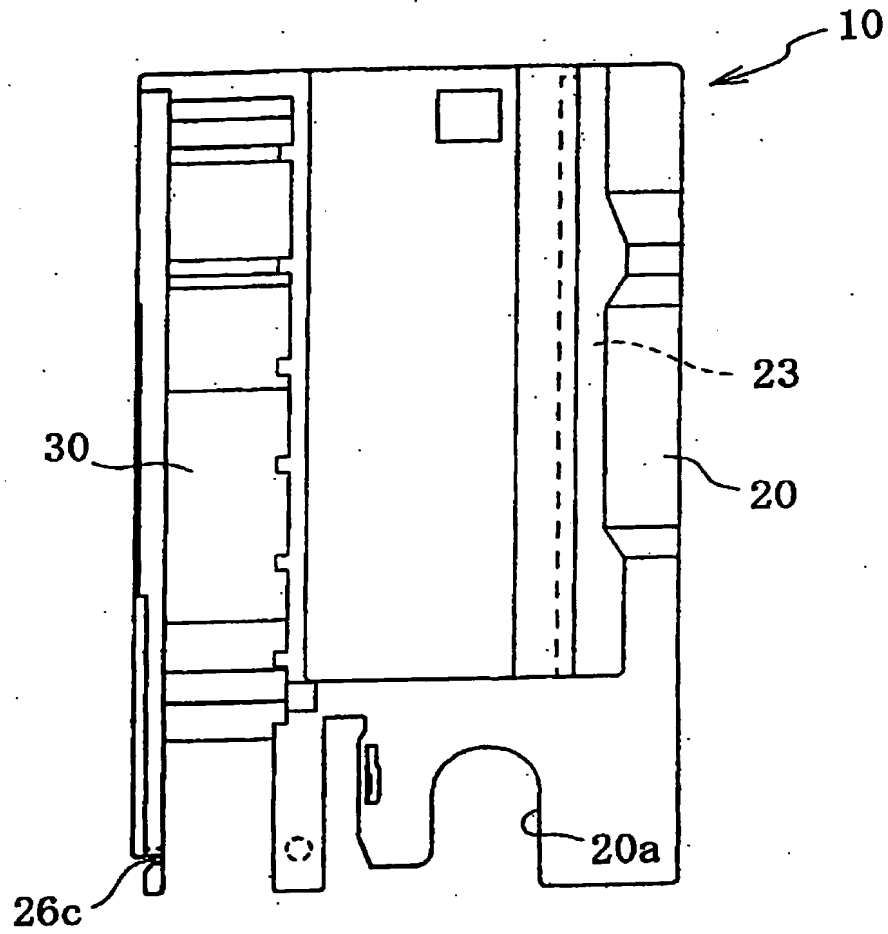


FIG. 5

**FIG. 6**

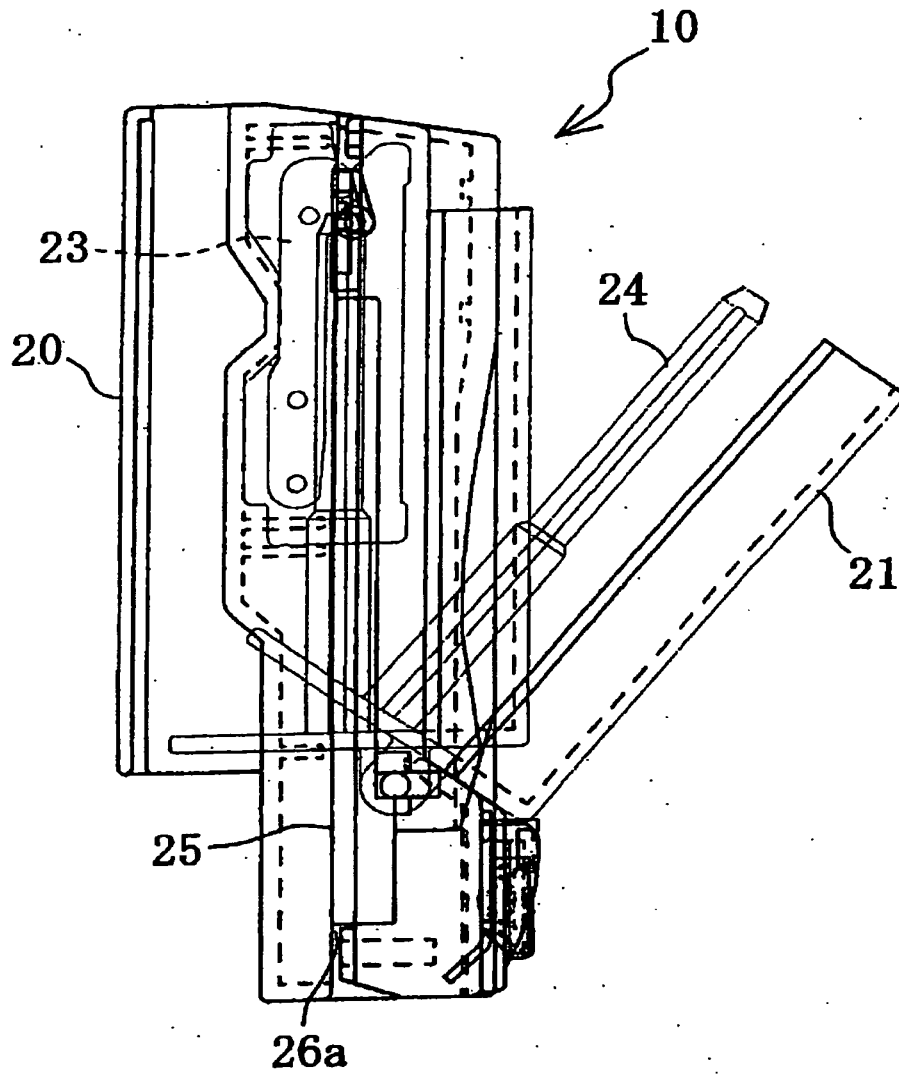


FIG. 7

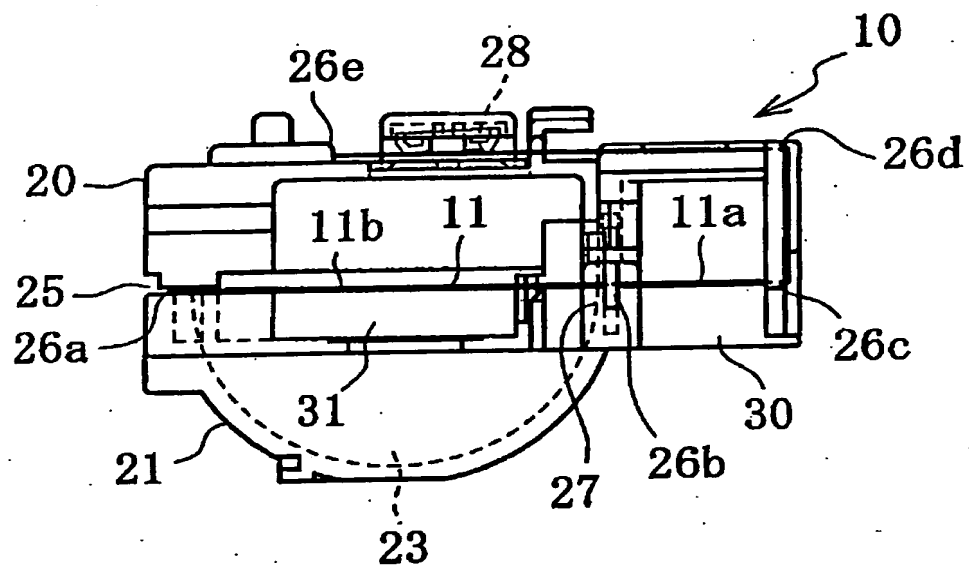


FIG. 8

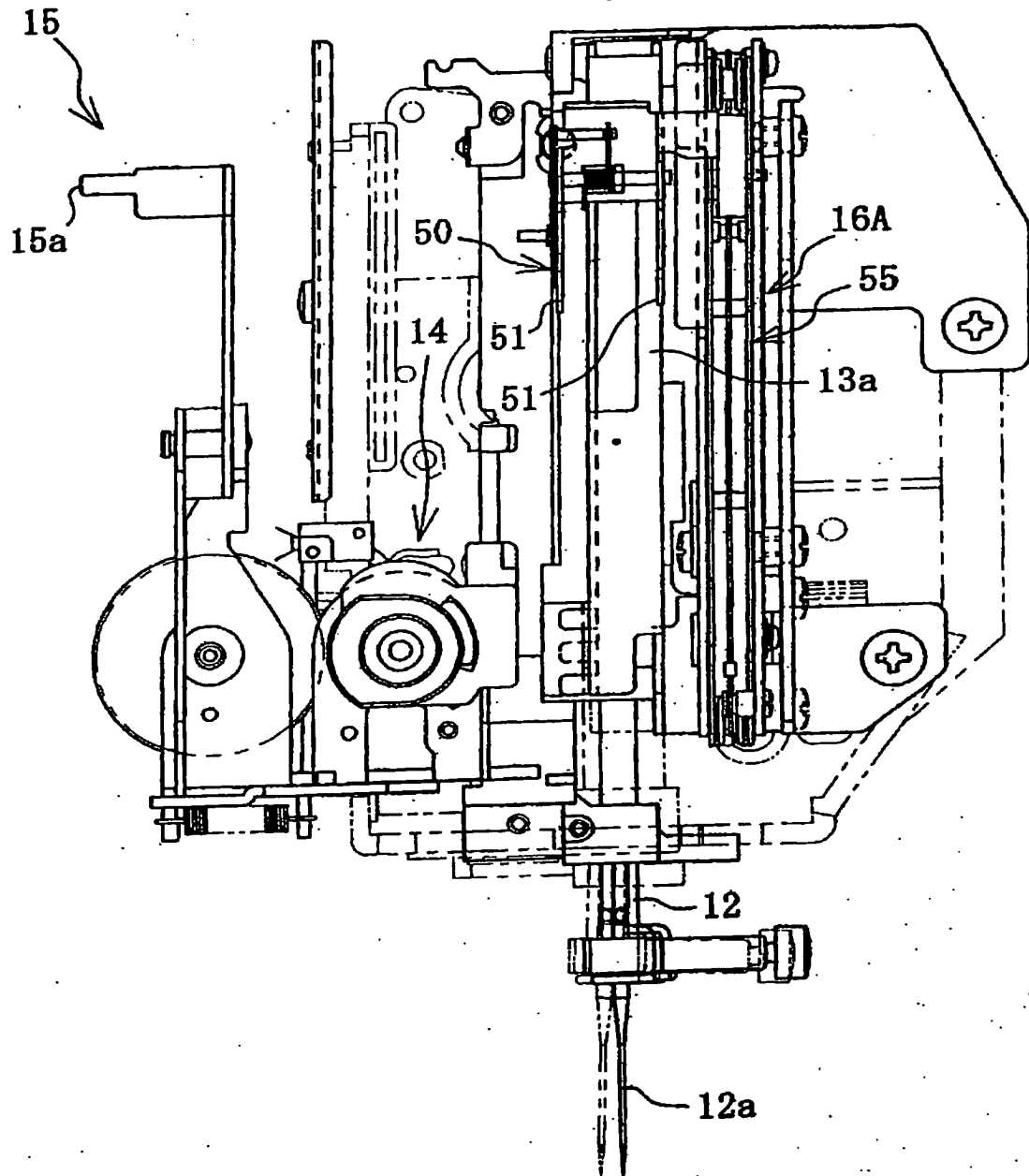


FIG. 9

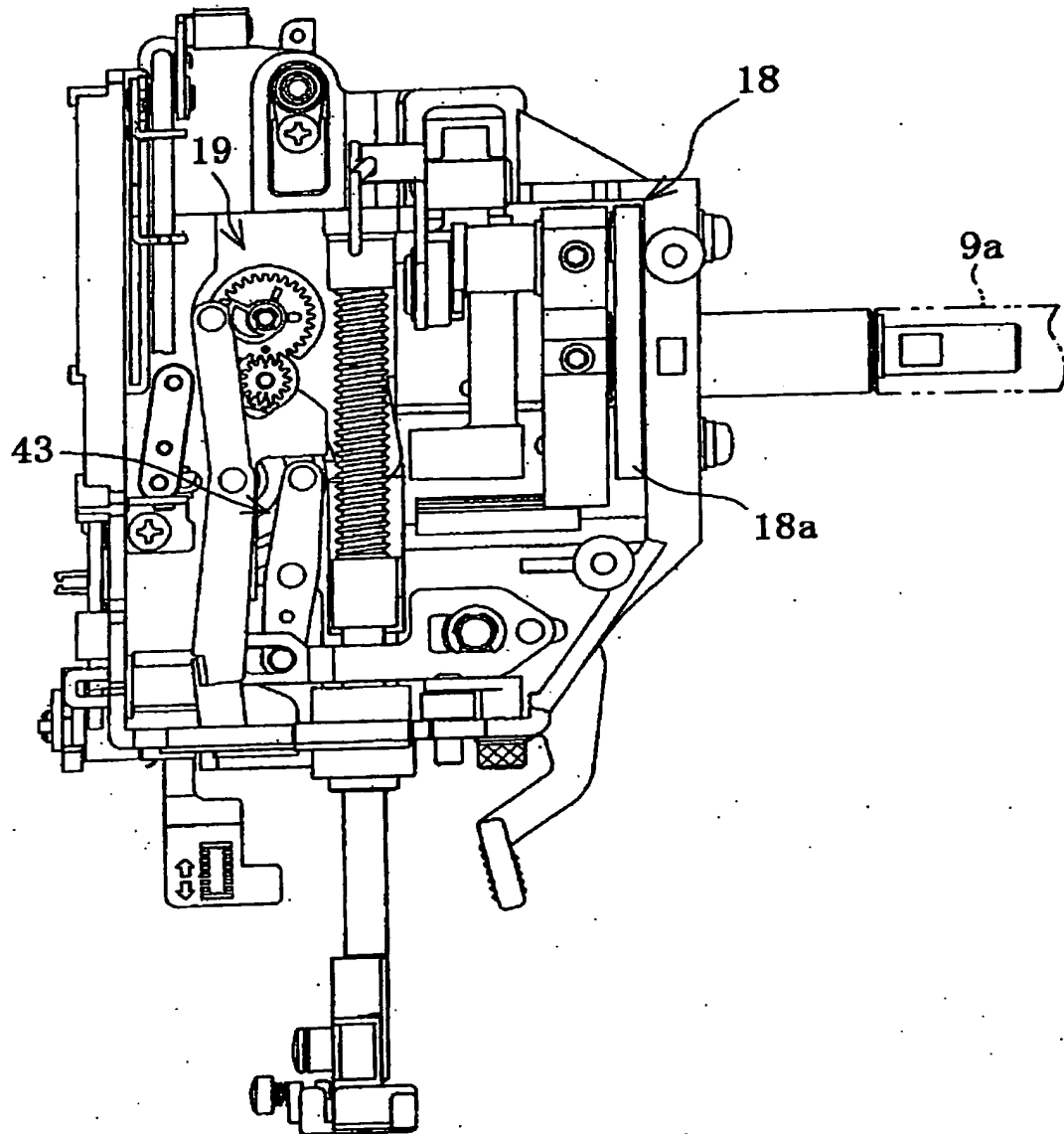


FIG. 10

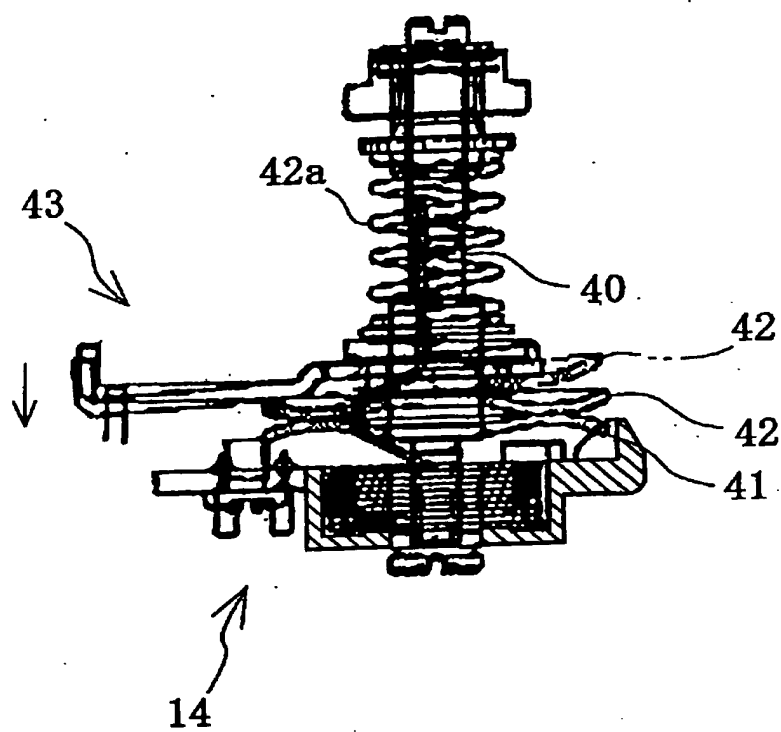


FIG. 11

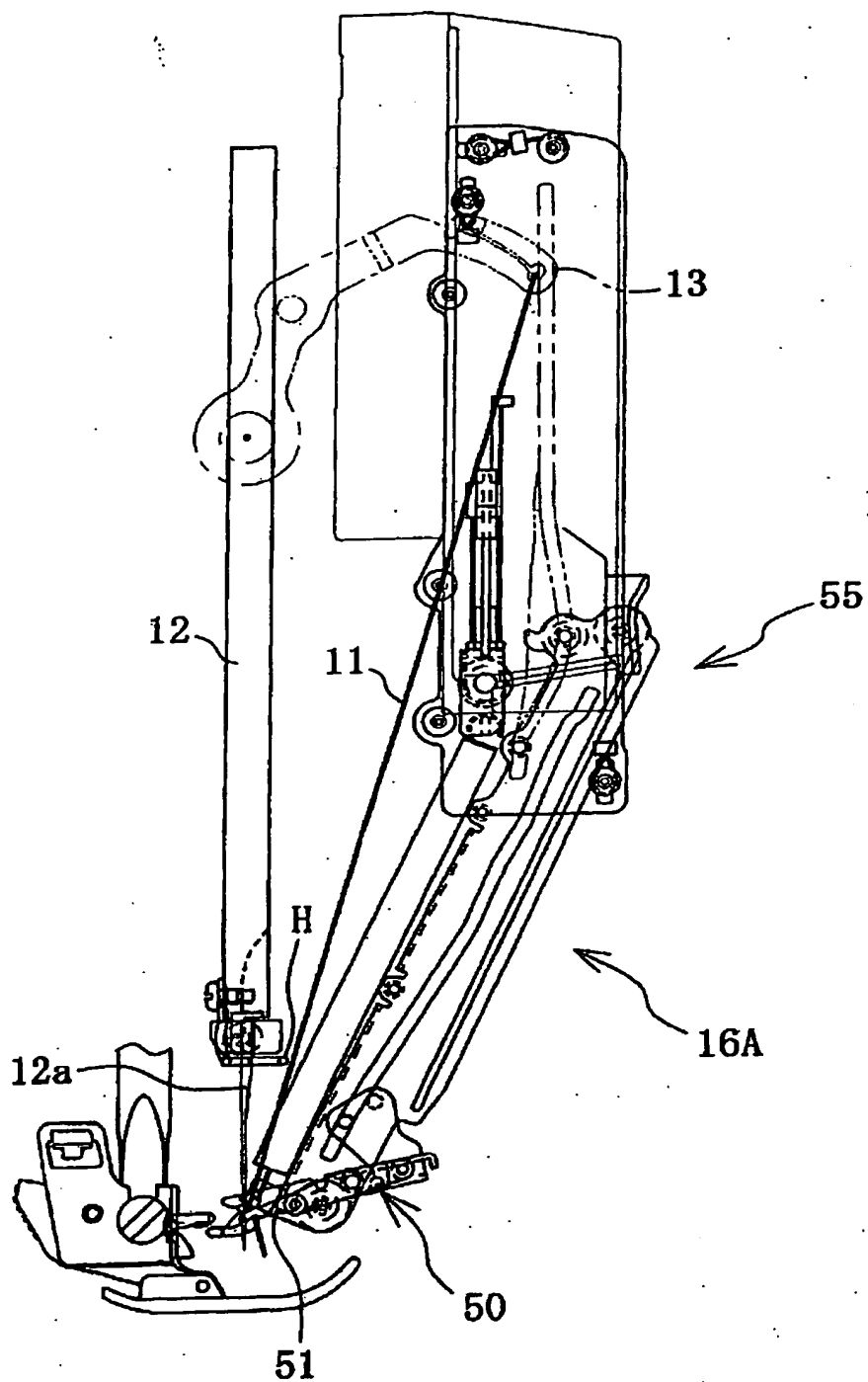


FIG. 12

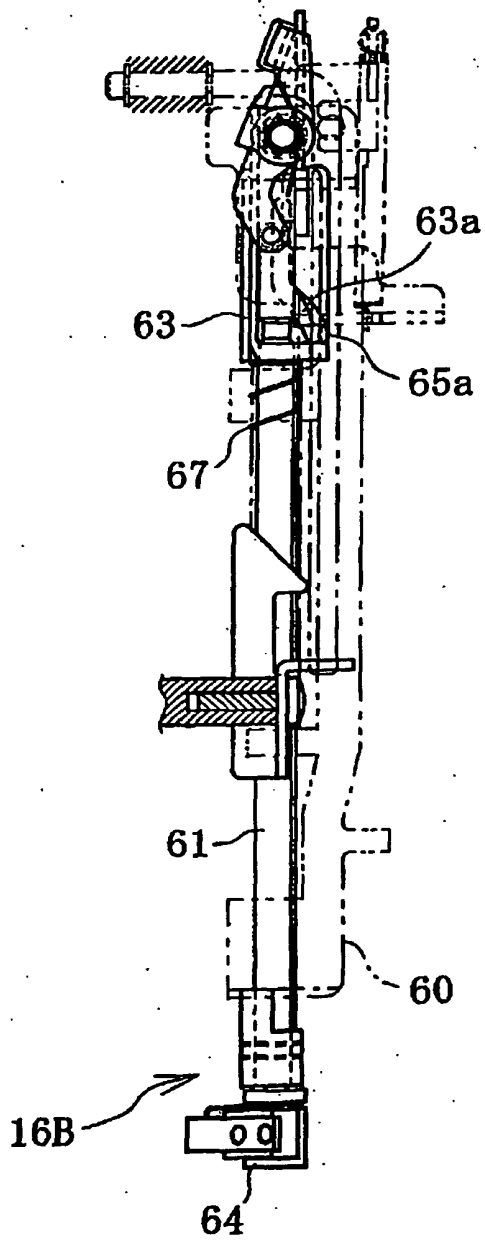


FIG. 13A

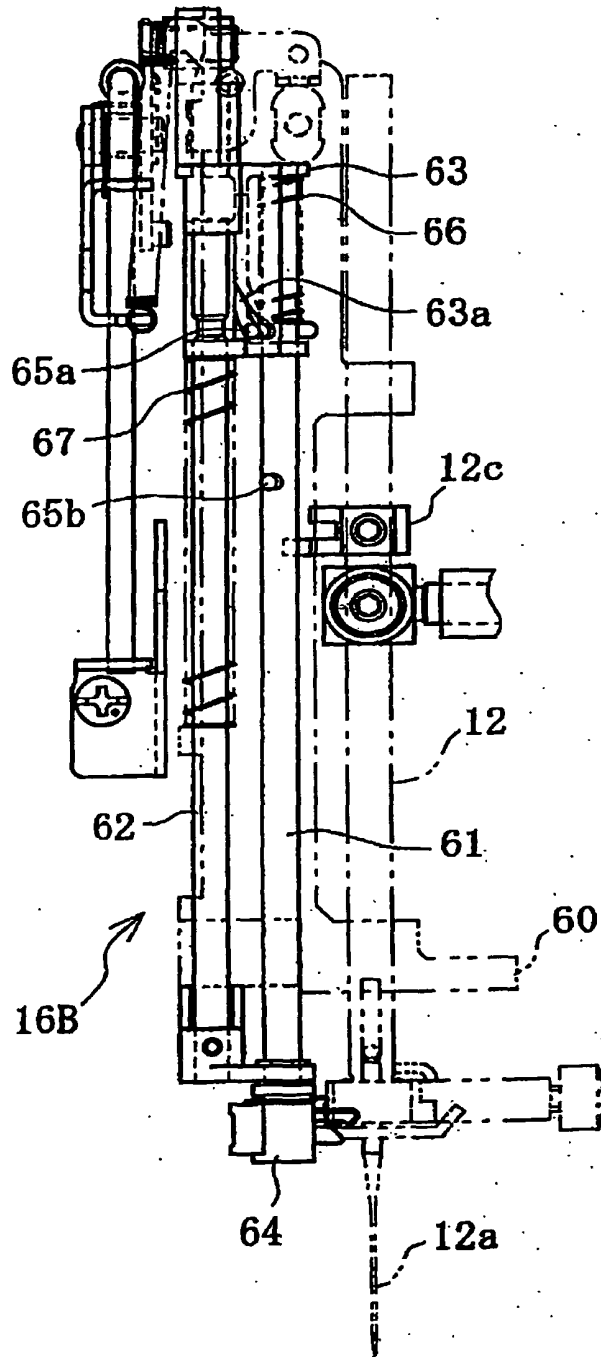
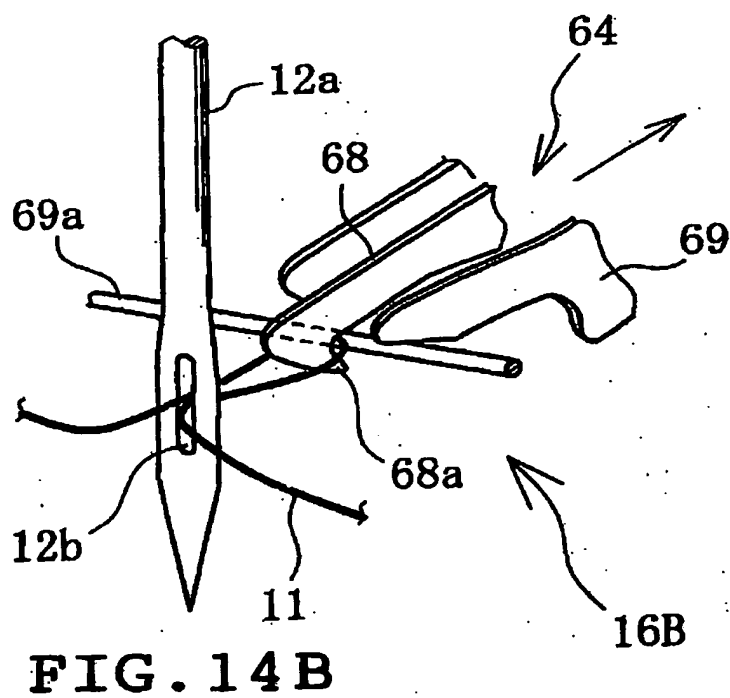
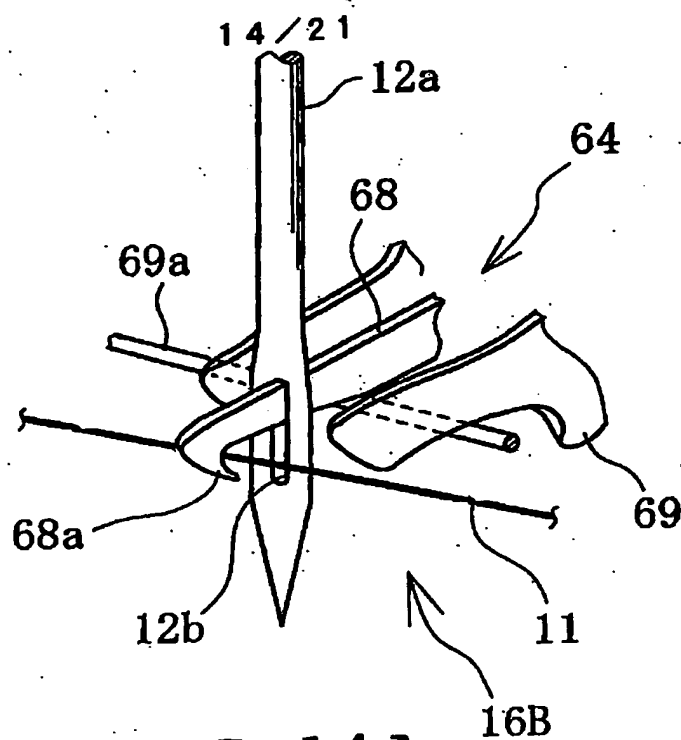


FIG. 13B



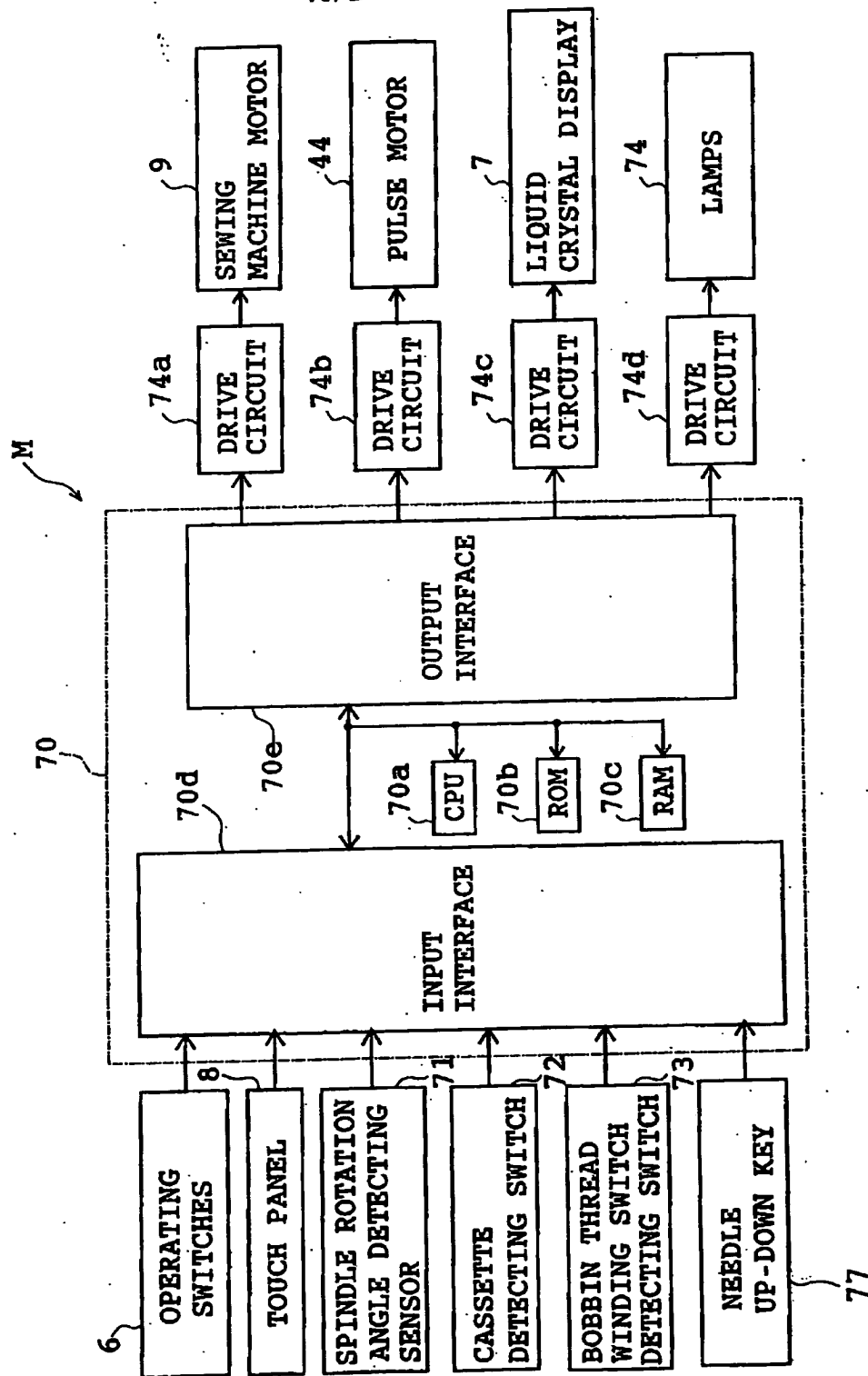


FIG. 15

70b

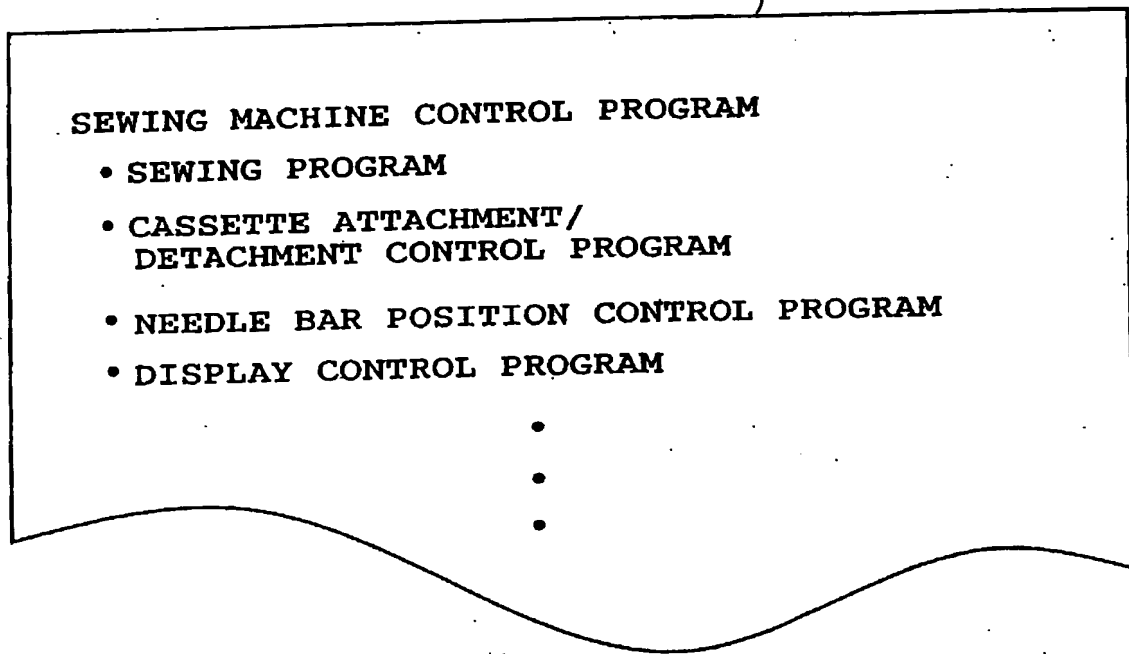


FIG. 16

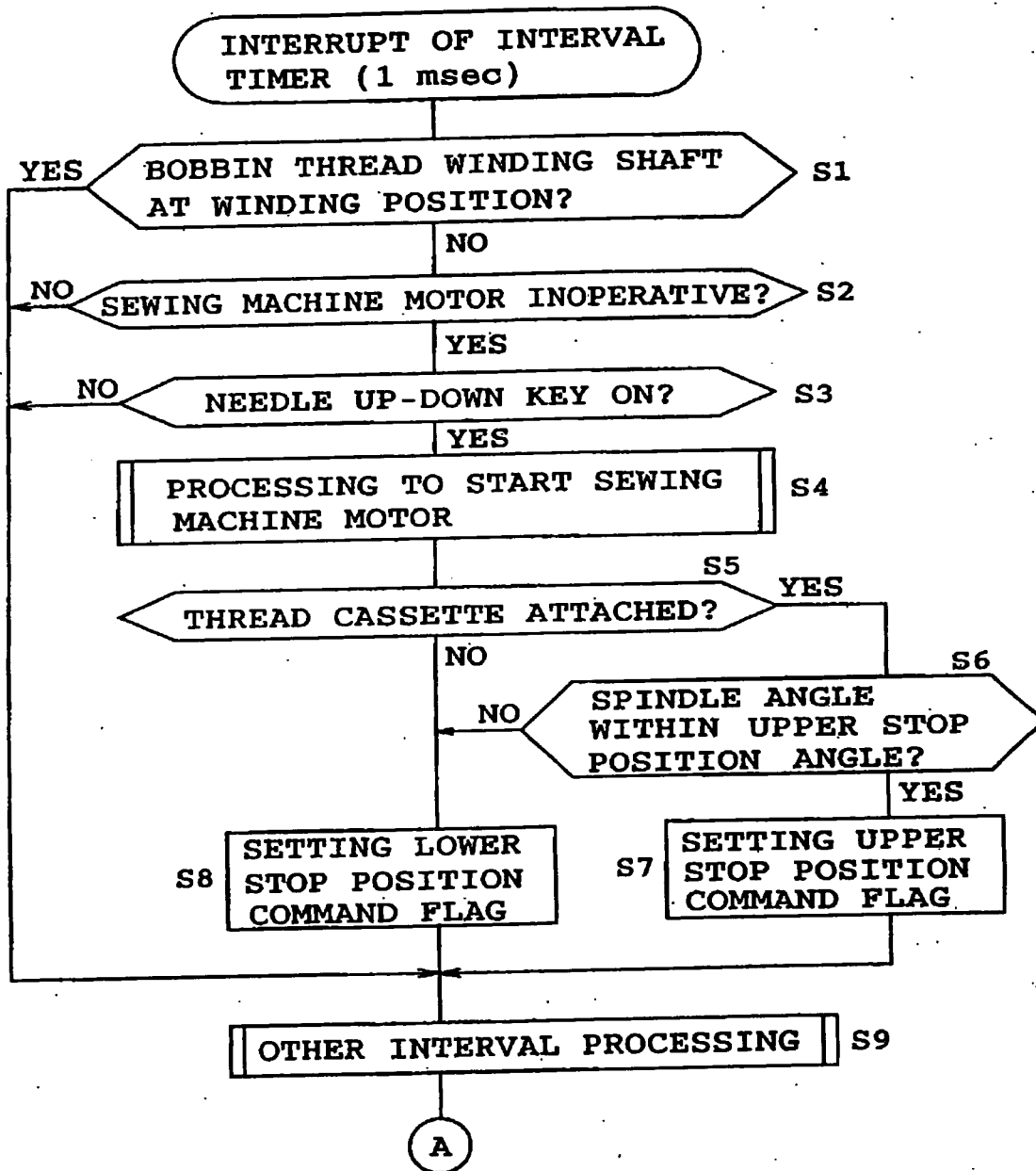


FIG. 17

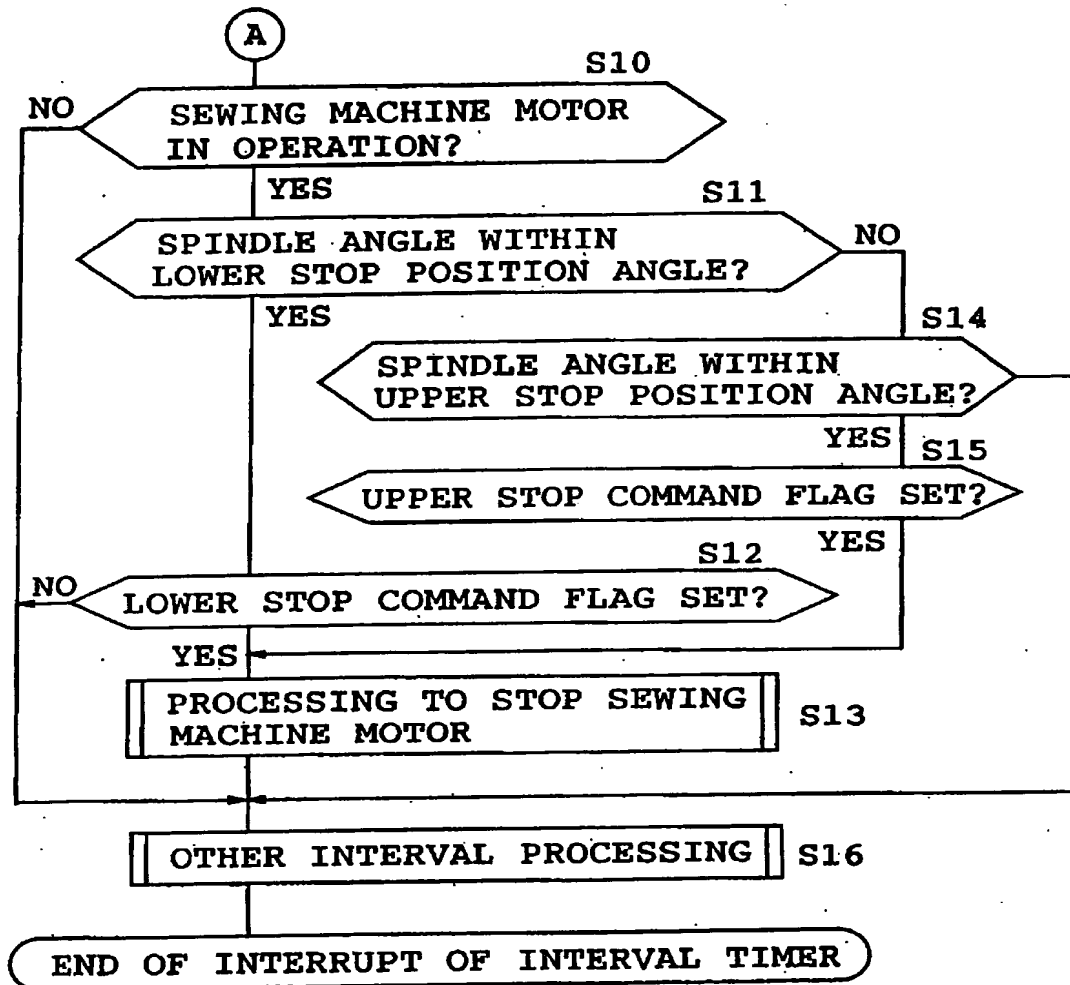


FIG. 18

		SPINDLE ANGLE IN OPERATION OF NEEDLE UP-DOWN KEY			
THREAD CASSETTE IN OPERATION OF NEEDLE UP-DOWN KEY	ATTACHED	UPPER STOP POSITION	UPPER STOP POSITION ↓ LOWER STOP POSITION	LOWER STOP POSITION	LOWER STOP POSITION ↓ UPPER STOP POSITION
		LOWER STOP POSITION	LOWER STOP POSITION	UPPER STOP POSITION	UPPER STOP POSITION
	UNATTACHED	(LOWER STOP POSITION) ↓ UPPER STOP POSITION	(LOWER STOP POSITION) ↓ UPPER STOP POSITION	UPPER STOP POSITION	UPPER STOP POSITION

FIG. 19

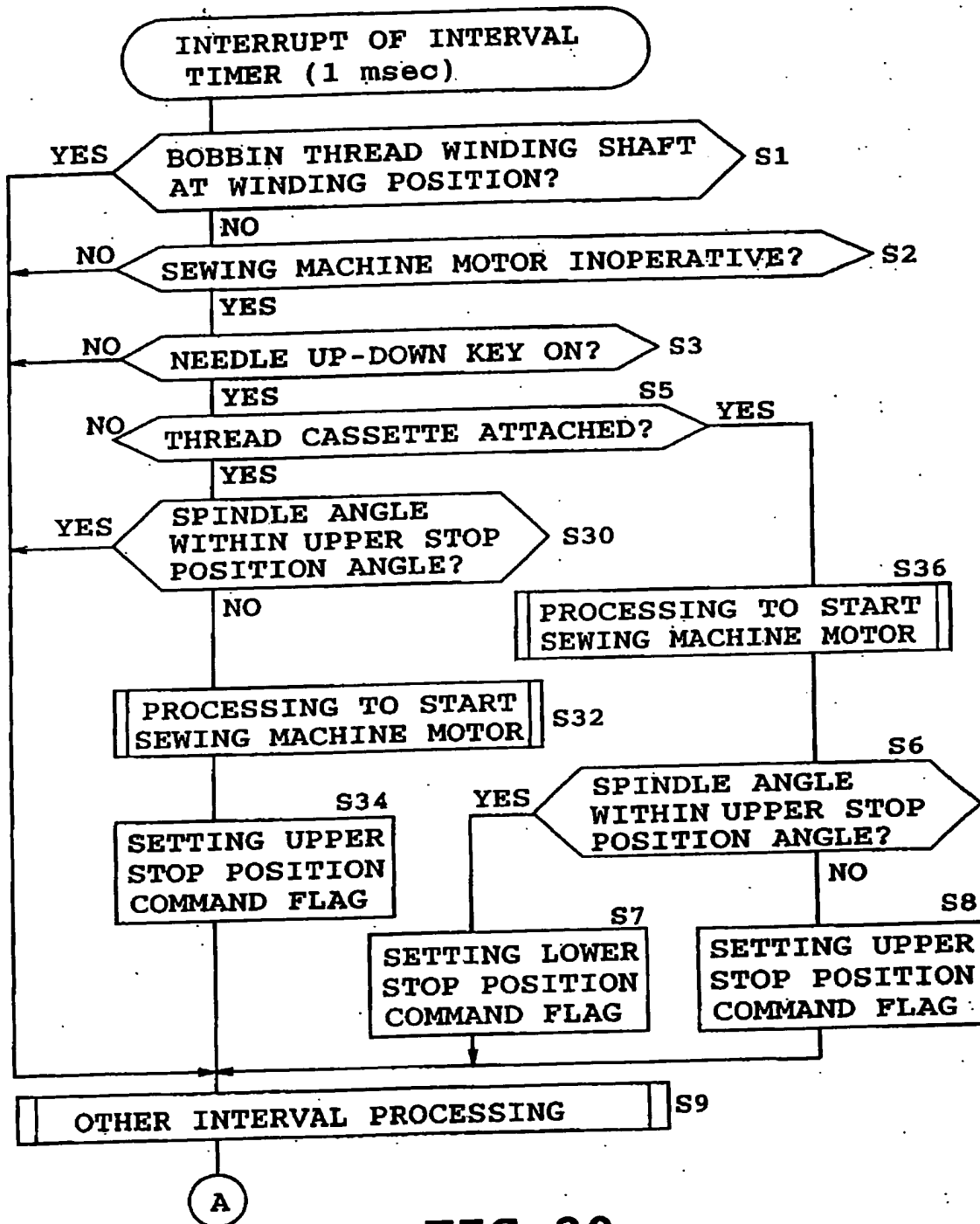


FIG. 20

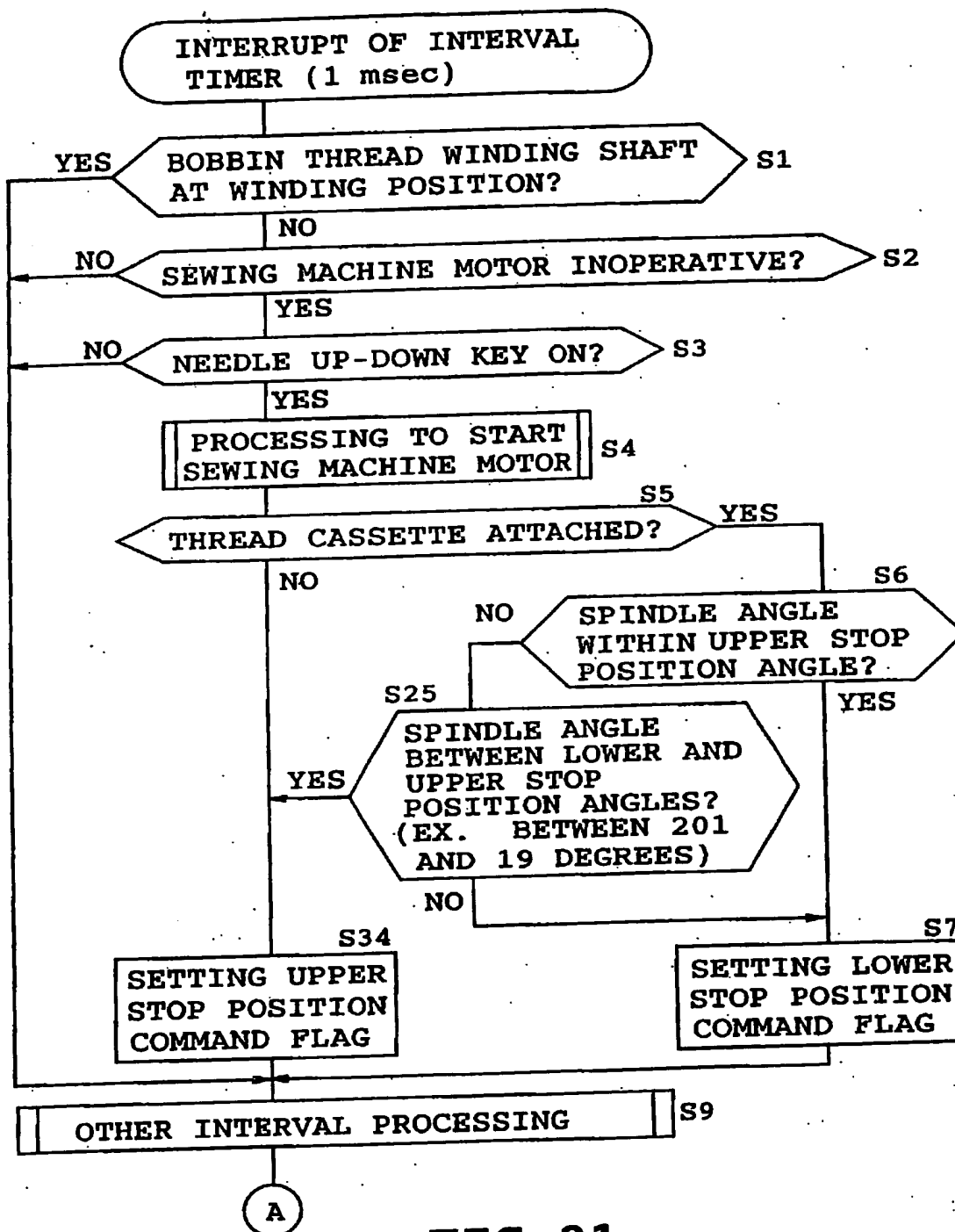


FIG. 21